MODIS Technical Team Meeting
Thursday, January 23rd, 2003
Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Dorothy Hall, Jack Xiong, Shaida Johnston, Steve Kempler, Ed Masuoka, Wayne Esaias, Bill Barnes, Michael King, Gerhard Meister, Barbara Conboy, Robert Wolfe, and Eric Vermote, with Yolanda Harvey taking the minutes.

1.0 Upcoming events

- Semi-annual Reports Due January 15, 2003, covering period July-December 2002.
- MODIS Oceans Workshop, February 3-4, 2003, New Hampshire, USA
- Data Products Review March 10-11, 2003
- Ocean Color Meeting, April 15-17, 2003, Miami, Florida, USA.
- IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts due by January 17, 2003). http://www.igarss03.com/
- 10th International Symposium on Remote Sensing by The International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts due by February 10, 2003). http://www.spie.org/info/rs

2.0 Meeting Minutes

2.1 General Discussion

Harvey and Conboy reported that the MODARCH server is back online, and that the MODIS site would be back up shortly. Salomonson suggested getting a backup server to avoid this problem in the future. Masuoka said that getting a backup is possible, and Conboy said that Brandon Maccherone, the MODARCH Webmaster, is already researching the cost.

Salomonson reminded everyone to submit their lists of MODIS publications to Yolanda Harvey (yharvey@pop900.gsfc.nasa.gov) for a count and to update the listings on the MODIS site. Salomonson noted that MODIS publications/presentations have grown rapidly at recent AGU meetings, which is a good indication of MODIS' use.

Johnston introduced a discussion about the long-term use of the DAAC Data Pool. She mentioned speaking with Glen Iono and Mike Moore about the issue. Johnston said that Moore had talked about all data ordering going through the EDG in the near term would be checked before being sent out. Kempler said that this is a matter of functionality. Johnston agreed, but noted that if random orders are being staged from the Data Pool, this affects our control over its contents. She continued that she would like to find out what is planned for the Data Pool; what do we want the Data Pool for, could we move all data from tapes to the Pool, who is the Pool architect, who is making the long-term plans, etc. Masuoka said that Dan Marinelli is working on the Pool with help from some other people. Salomonson said that our plan/priority for the Pool is whatever gets the data to the casual user quickly and easily. Masuoka said that when they initially allocated the Data Pool, it was for L1B data, and Kempler added that roughly 2/3 to 3/4 of the Pool was to be for L1B data. There are a good number of high-level products, and though L1B takes up a lot of room, there is still plenty left over for those products. The idea for

having 30-45 days of L1B data in the Pool is that those days provide a buffer for MODAPS, and because that data is very popular. Masuoka added that the GES DAAC's data mining also uses the data pool.

Johnston said that she is more interested in the philosophy behind the Pool, rather than the details of what is in it. If our philosophy is going to be slanted toward the casual user, then that is what determines what will go in the Pool. Salomonson added that this idea is why we are having this discussion. Esaias added that we have to remember that the Pool is also for the power-users who want to be able to create complex data sets that are difficult to do via traditional ordering methods. The most heavily used data should compose the bulk of the Pool. Salomonson said that our biggest obstacle is in getting our data into the hands of the user. Many people are using MODIS data now because they've gotten help from a Science Team member, but this won't always be possible. There are many people who will be daunted by the time it takes to learn how to use the ordering system, even though once they're past that stage they would consistently use the data. Kempler then questioned what is the right data to put in the Pool. He said that the idea is to leave in the Pool what is in high demand, and remove what isn't used much.

Salomonson said that we also have to think about the browse. Wolfe said that he had several meetings with Robin Pfister, who said that they have a programmer working on the "glue" between the browse interface, shopping cart, and ECHO, though there hasn't been much progress lately. Wolfe specified that this process is for all three discipline's browses. The "glue" is supposed to be generic enough to work for all the browses.

Salomonson reported that Barbara Summey is working on animations for MODIS. Salomonson said that she is working on showing the spectral content of MODIS as one looks at a representative scene. Her work seems very educationally informative, and once she gets it refined, perhaps she could do some others. Salomonson suggested as a possibility a time-lapse animation of temporal vegetation changes for large areas like North America. Esaias reported that he is working on an animation with Jesse Allen on a combined Land/Ocean production timed series. Salomonson mentioned that SeaWiFS has one of biomass. Salomonson said that if anyone has animation ideas, they should contact him (Vincent.V.Salomonson@nasa.gov) or Barbara Summey (bsummey@agnes.gsfc.nasa.gov).

Salomonson said that he talked to Tom Pagano (JPL—formerly with MODIS at Santa Barbara), who said that he has an instrument idea that provides AIRS spectral capability at MODIS spatial resolutions. Salomonson said that he has invited Tom Pagano and Mous Chahine to visit the MODIS Technical Team meeting on February 27th and describe this concept.

2.2 Instrument Status

Xiong reported that calibration trending is fine. Terra has finished the Yaw maneuvers for the SD degradation study. The main issues on Aqua is that the SRCA xtalk test command upload failed, and they found that the last time the software was patched there was an error that prevents a command sent from the ground from executing. They found that the first patch was not tested/verified until they did this SRCA procedure, and the second patch is on hold. Johnston said that we need to put the second patch in soon,

because it is dangerous not to be able to put in manual commands. Xiong said that the Aqua MODIS SRCA xtalk test has been delayed.

Xiong said that the University of Miami is concentrating on the Ocean Color band issues and requesting a continuous solar diffuser calibration data sets over a couple of days from Terra. This will not cause any serious problems for the solar diffuser degradation. The solar exposure is limited, because the solid diffuser screen was down. Esaias said that the attenuating screen (used in SD calibration) prevents the Ocean Color band from saturation.

Xiong reported that they are going to update the Terra and Aqua LUTs.

2.3 DAAC

Kempler reported that Aqua processing is right on schedule, and Terra is a few hours behind the leading edge. There have been some problems with the Data Pool, which is acting sluggish and has slowed reprocessing. They have not yet decided when they will disconnect it. Johnston asked if it is holding up all data ingest, and Kempler said no, only the reprocessing. Kempler also noted that they are upgrading their tape drives.

2.4 MODAPS

Wolfe reported on the Aqua attitude drift problem. Wolfe said that he attended a meeting this morning (January 23rd), where they found out what the problem is: there were a couple of mistakes the reference frames, that is causing a drift of 150 arc seconds over three years (50 arc seconds per year). This problem is because precession is not accounted for correctly. Wolfe said that they are going to do a test to see if their fix will work, then either make the fix in the onboard attitude control software, in the star charts or in the way the ephemeris is uploaded. Another change will be needed in the DPREP software. Wolfe added that this problem is only with Aqua; Terra is fine in that respect. The current geolocation error is around 250 meters RMS, and they would like it less than 50 meters (goal) and 150 meters (according to specs). Xiong added that he discovered a case where Aqua had a 0.2-degree spike in the attitude. He found this by looking at one week of data when the solid diffuser calibration was being performed. When he calculated the m1 calibration he found this spike. When he looked through the variables, he found that the problem was the angle of the spacecraft. Wolfe said that he would look into it. Esaias said that this could be very significant.

Masuoka reported that he talked to David Herring, and found that Herring has all the data for 1 year of 500-meter blue marble. Salomonson noted that the Navy is very interested in this, and Wolfe wondered if Herring is going to wait for the Collection 4 data. Masuoka said that Herring is probably just going to use the Collection 3 data.

Masuoka reported that the NOAA/NPP project asked him to look at the 2-hour response-time maintenance of the Near-Real Time Processing System for MODIS. This is because the Air Force Weather Service has come to depend on products from this system. On the browse, Masuoka said that he got a call from Howard Dew who said that the EDC DAAC was interested in getting the browse for the MODIS land products so that browse images can be added to the EDG. Hall noted that these browses are absolutely essential for low-level users.

Masuoka said that Gary Alcott told him that the DAAC occasionally loses L0 data that is stored on tape, and has trouble getting it back. SDST has offered to modify their Level 0 simulation software to take real Level 1A data sets and produce instrument packets that can be used to recreate the Level 0 product when a portion of it is lost from tape. Alcott thought that they could use the same process to fill in bad packets of L0 as the L1A does. Wolfe said that there is something like that in place that would need adjustment.

Masuoka mentioned that he went to a meeting about EO1 doing a sensor-web simulation with MODIS to look at volcano eruptions in near real-time.

Masuoka reported that the ICD volume 6 has been sent forward to the ESDIS Configuration Control Board (CCB) for baselining. All ESDTs have been looked over for accuracy and that we agree to volume and granule limits. He added that he will send out explanation of it.

Masuoka said that there is a funding issue on upgrading technology to store data volume, and he would like to look at the question of what part of that is for MODIS product volume versus the addition of a number of years of line to the mission, and what can be done to reduce product volumes. He said that for the Data Products Review, he wants to be able to say that one part is for new products, one part is for adding 3-5 years onto the project, and that we have a plan for addressing the problem of product volume. Salomonson said that we have to work on a way to clearly explain this issue to them. Masuoka said that he is interested in how much of the issue is a function of total volume, and how much is a function of time. The funding is supposed to solve the problem permanently. He said that he wanted to let the Team know that he's working on this problem. Esaias asked whether we are still in the mode of producing products faster than we have storage for, and Masuoka said that at this point it looks like the issue is not a problem until Collection 5 since the ESDIS Project has already bought hardware to address the current problem at EDC. Esaias said that he would like for us to be organized so that if ends up needing to drop some products, he will be prepared.

2.5 Land Discipline

Vermote said about the Data Pool that he thinks that the last production has simplified access to the data. He said that he knows of people that are writing proposals to get data from the Pool, which is really important.

Vermote reported that on Friday January17, 2003, Land released a number of Terra Collection 4 products, including Surface Reflectance. Wolfe added that more would be released the last week of January. He also added that the Land browse would be able to use Collection 4 data, and display it side-by-side with Collection 3 data.

2.6 Oceans

Esaias said that Oceans would like to develop a L2 browse. He wondered whether Oceans should create its own, or is there a template available that they could use? King mentioned that Atmospheres has a L2 browse for selected data (golden days) and for selected science data sets, and Esaias said that Oceans could do something like that. He asked if there is a browse that they should emulate so that the work Pfister is doing with be compatible, and Salomonson suggested looking at the Land L2 browse. Masuoka said that if they could decide the relevant parameters, they could clone the Land browse.

2.7 Atmospheres Discipline

King reported that he got an update from Vermote on the Data Products Handbook, which he forwarded to Sterling Spangler. He noted that Land might need higher resolution images for the Handbook. Salomonson said that he would like to look at the Handbook in its current version, and King said that he could borrow a hardcopy from him. Esaias mentioned that he has a hard time finding out what the latest Oceans updates are in the Handbook, and King said that he should speak with Sterling directly.

King reported that his group redid the EOS project scientist office website, and that it went live December 27, 2002 (http://eospso.gsfc.nasa.gov). They have had a million hits so far, with the most frequently downloaded document being the LIS ATBD. During this period, the MODIS web site has been down and so it has not been possible for people to download any MODIS ATBDs from his site, as it points to the MODIS site repository for these documents. As a consequence, he has received a lot of requests for MODIS ATBDs for research purposes during this period. King said that he met with Michele Rienecker, who would like to know which MODIS products are using DAO products as input in MODIS PGEs, and would like to see more investigations using them.

3.0 Action Items

3.1 New Action Items

3.1.1 Masuoka to send out an explanation of ICD ESDTs to the Technical Team.

3.1.2 Funded MODIS Science Team Members to send a list of the number of advanced degrees (Master and Doctorate) produced as a result of funding support, etc., of your MODIS investigations to Barbara Conboy by February 5, 2003.

3.2 Old Action Items

3.2.1 King and Kempler to work together on getting ESDTs for the new Atmospheres L2 data product.
Status: Open.

3.2.2 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.
Status: Open.

3.2.3 Wolfe to contact Herring about the shopping cart feature for the Earth Observatory website.
Status: Open.

3.2.4 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.
Status: Open.